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SUMMARY

Agenda Item: D.7. Finland

AUTOGENOUS GRINDING : A KEY TO ECONOMIC PROCESSING OF MINERALS

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Autogenous grinding - A key to economic processing of minerals

by

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Summary

(a) Due to the increasing high cost of metallic grinding media such as rods and balls, the use of autogenous medium should be seriously considered.

(b) Autogenous grinding is well applicable in most industrial grinding operations.

(c) Conventional coarse grinding with rods can be replaced by autogenous primary grinding.

(d) Conventional fine grinding with balls can be replaced by autogenous secondary grinding.

(e) Existing grinding plants can be converted from grinding with metallic medium to autogenous at a relatively low cost.

(f) No new grinding plant should be built without a consideration of autogenous grinding.

(g) Autogenous medium needed for primary grinding is coarser than that used for secondary grinding.

(h) Autogenous media are separeted by screening from the crushing circuit.

(j) The capacity of an autogenous grinding mill is always less than that of the same mill with metallic medium, both operated under otherwise the same conditions.

(k) Fig. I gives a series of fundamental base mill curves which can be used in the evaluation of mill sizes for any wet autogenous grinding operation.

(l) A number of numeral examples are given to demonstrate the applicability of these curves.

(m) Autogenous mills can be operated at subcritical as well as at supercritical speeds.

(n) Interesting possibilities exist for running autogenous mills at supercritical speeds in such a way that the material to be ground, the grinding medium and even the automatically renewable semiautogenous lining of the mill all consist of the material which is the subject of the grinding operation. These new possibilities are now being extensively studied.

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